Identification of Social and Occupational Risk Factors Associated with CKDu Patients in an Agricultural Community in Kebithigollewa, Sri Lanka

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CKDu (Chronic Kidney Disease of Uncertain etiology) now known as CINAC (Chronic Interstitial Nephritis of Agricultural Communities) is a form of Chronic Kidney Disease which has become a global health burden. With its growing prevalence in Sri Lanka, this study was carried out to identify the social and occupational risk factors associated with CKDu patients living in an agricultural community in Kebithigollewa, Sri Lanka. This community based cross-sectional study was done for a period of three months involving 30 cases (CKDu patients with serum creatinine >1.2mg/dL for 6 consecutive months) from Kebithigollewa CKDu Western Ayurvedic Integrated Clinic in North Central Province (NCP), Sri Lanka and 30 controls (general public of same region who weren't diagnosed with CKDu and whose serum creatinine <1.2mg/dL for 3 consecutive months). An interview based questionnaire was used to collect socioeconomic and socio-demographic data of the participants. Their heights and weights were measured to calculate the BMIs. Blood samples were withdrawn, which were later analysed using an automated blood analyser to obtain the serum creatinine values. Data collected was computed and analysed using the software Graphpad Prism and SPSS. All the participants of the research were active residents living in NCP since birth. As of the results obtained, 83.34% of cases were in the age range 40-70 yrs and 70% were males. Moreover, 86.66% of the diseased population practiced agriculture as their main source of income with chena and paddy cultivation being the main practice followed. Serum creatinine was high in farmers and laborers. Most importantly, 96.66% of them were from families with low income who earn 0-20,000 LKR per month. Furthermore, 40% of CKDu patients have only gained up to five years of school education, while 63.33% were overweight. The number of working hours per day and serum creatinine exhibited a strong association among them while the number of working hours and BMI showed a statistical significance with $P<0.05$ ($P=0.02$) leading to conclude that occupation impacts on CKDu occurrence and progression. The social impact on CKDu occurrence was indicated by the significant relationship of age with serum creatinine.

Keywords: Agricultural activities, CKD of Uncertain etiology (CKDu), Heavy metals

References

1. Lowe, C. and Kumarasinghe, N., 2021. Identification of Social and Occupational Risk Factors Associated with CKDu Patients in an Agricultural Community in Kebithigollewa, Sri Lanka.
2. Weaver, V.M., Fadrowski, J.J. and Jaar, B.G., 2015. Global dimensions of chronic kidney disease of unknown etiology (CKDu): a modern era environmental and/or occupational nephropathy?. *BMC nephrology*, *16*(1), pp.1-8.
3. Wijewickrama, E.S., Gunawardena, N., Jayasinghe, S. and Herath, C., 2019. CKD of unknown etiology (CKDu) in Sri Lanka: a multilevel clinical case definition for surveillance and epidemiological studies. *Kidney international reports*, *4*(6), pp.781-785.